

The Federal Transit Administration (FTA) requires an independent auditor to review the statistics used in the allocation of Federal funds under the Urbanized Area Formula (UAF) Program (Section 5307) and the Capital Program for Fixed Guideway Modernization (Section 5309). These statistics are reported on the Federal Funding Allocation Statistics form (FFA-10) in the National Transit Database (NTD) program. To assist independent auditors in this review, FTA established a set of suggested procedures to be performed by the auditors when conducting the review with the staff of the transit agency. If a suggested procedure is not used, the auditor must replace it with an alternative procedure that fully addresses the intent of the suggested procedure. This help sheet provides additional information beneficial to auditors when carrying out these procedures.

In NTD reporting, a transit agency reports service and its characteristics on forms describing basic information (Basic Information Module), financial data (Financial Module), and non-financial operating data (Asset, Service and Resource Modules). The last form, the Federal Funding Allocation Statistics form (FFA-10) uses data reported on the other forms.

Due to funding rules, not all data in the report may be included in the Federal funding allocations. These include statistics for:

- Transit services operated only in non-urbanized areas (non-UZA) or urbanized areas (UZA) of fewer than 200,000 population
- Bus (MB) high occupancy vehicle (HOV) fixed guideway (FG) that is not safely operated, not in a congested travel corridor or meet requirements for high occupancy / toll (HO/T) lanes
- Fixed guideway directional route miles (FG DRM) which are included in another NTD reporter's Federal Funding Allocation Statistics form (FFA-10).

Auditors should refer to the Federal Funding Allocation Statistics Module in the NTD Urbanized Area Reporting Manual. The module contains detailed discussion and documentation of how data are transferred to the form from other NTD report forms, and how data are reported when there are multiple UZAs and non-UZAs served, and when there are both bus fixed guideway (FG) and non-fixed guideway (NFG) transit operations.

The proper documentation and reporting of data statistics used in Federal funding allocations is the major focus of the auditor's review. The auditor should refer to the NTD Urbanized Area Reporting Manual for detailed discussion of requirements and definitions (or the glossary available on the NTD website). In particular the auditor should refer to the following forms and data items:

- Identification form (B-10) — Modes and types of service (TOS)
- Contractual Relationship form (B-30) — Purchased transportation (PT) agreements
- Operating Expenses form (F-30) — Operating expenses (OE)
- Service form (S-10) — Actual vehicle revenue miles (VRM) and passenger miles (PM)
- Fixed Guideway Segments form (S-20) — Fixed guideway directional route miles (FG DRM)
- Federal Funding Allocation Statistics form (FFA-10) — Data statistics for Federal funding allocations.

The auditor must address the data items for each mode by type of service (TOS).

A major part of the auditor's review depends on identifying responsible personnel, source documents, and procedures to ensure that data are properly collected, maintained and reported to the NTD program. Each of these areas is discussed below.

Personnel

The NTD contact person is the person identified by the transit agency as being responsible for coordinating the submission of the NTD report and the transit agency's response to validation issues. FTA recommends that the contact person be involved or informed of discussions the auditor(s) has with the personnel who may be collecting or completing forms for the data used in the Federal formula allocations.

Identifying the appropriate staff (departments) is essential to ensuring the review satisfies FTA requirements. The transit agency may operate transit services (i.e., directly operated (DO) type of service (TOS)) or may contract for all or some transit services from a public or private entity (i.e., purchased transportation (PT) type of service (TOS)). The auditor needs to identify the personnel responsible for administering and monitoring purchased transportation (PT) contracts, and the personnel responsible for reviewing or collecting the NTD data.

For each of the data elements in the formulas, the following identify the departments and personnel typically responsible for the data collection, record keeping and reporting:

Actual vehicle revenue miles (VRM):

- Scheduling department
- Transportation (operations) department
- Planning or service development department

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- Paratransit or demand response (DR) department
- Contracts (purchasing) department.

Passenger miles (PM):

- Scheduling department
- Planning or service development department
- Paratransit or demand response (DR) department
- Contracts (purchasing) department.

Fixed guideway (FG) facilities:

- Engineering department
- Rail department
- Planning or service development department.

Operating expenses (OE):

- Accounting department
- Contracts (purchasing) department.

Purchased transportation (PT) services:

- Contracts (purchasing) department
- Accounting department
- Scheduling department
- Planning or service development department
- Transportation (operations) department.

Source Documents — Data

Actual Vehicle Revenue Miles

Actual vehicle revenue miles (VRM) should be derived based on the service operated. Scheduling department personnel should have detailed records of each scheduled vehicle trip — this will typically include the total length / time of the trip (scheduled vehicle miles), deadhead time / distance (deadhead miles), layover / recovery time, and running time / distance (scheduled vehicle revenue miles). There should also be records of missed trips or trips added that were not on the schedule. The total actual vehicle revenue miles (VRM) will equal the scheduled service minus any missed service plus any additional service.

For non-scheduled services / modes, such as demand response (DR) and vanpool (VP), individual departments are usually responsible. If the transit agency directly operates (DO) demand response (DR) services, the service may be operated by the transportation (operations) department or there may be a separate demand response (DR) or paratransit department. In the case of vanpools (VP), the planning or service development department or the marketing department usually coordinates the service.

See the discussion of actual vehicle revenue miles (VRM) in the Service Supplied section of the Service form (S-10) in the NTD Urbanized Area Reporting Manual. Auditors should pay particular attention to the exhibits that describe the accounting for miles and hours for bus (MB), demand response (DR) and rail service.

Passenger Miles

Passenger miles (PM) are usually an estimated statistic, sampled through an approved FTA sampling methodology or through a sampling methodology approved by a qualified statistician.

The following Federal Transit Administration (FTA) National Transit Database (NTD) rules apply:

Across all directly operated (DO) modes:

- If the total of vehicles operated in annual maximum service (VOMS) is greater than or equal to 100 vehicles and the transit agency serves an urbanized area (UZA) with a population greater than or equal to 500,000, the transit agency must collect passenger mile (PM) data every year for each directly operated (DO) mode.
- If the total of vehicles operated in annual maximum service (VOMS) is less than 100 vehicles and the transit agency serves a UZA with a population greater than or equal to 500,000, the transit agency must collect passenger mile (PM) data every three years for each directly operated (DO) mode. The next mandatory year for agencies on a three-year cycle is report year 2008.

- For any number of vehicles operated in annual maximum service (VOMS) and the transit agency serves a UZA with a population between 200,000 and 500,000, the transit agency must collect passenger mile (PM) data every three years for each directly operated (DO) mode. The next mandatory year for agencies on a three-year cycle is report year 2008.
- For any number of vehicles operated in annual maximum service (VOMS) and the transit agency services a UZA with a population less than 200,000, the transit agency must collect passenger miles (PM) data every three years. The next mandatory sampling year for agencies on the three-year cycle is report year 2008.

Across all purchased transportation (PT) modes:

- For any number of vehicles operated in annual maximum service (VOMS) and the transit agency serves a UZA with a population of 200,000 – 500,000, the transit agency must collect passenger miles (PM) data every three years. The next mandatory sampling year for agencies on the three-year cycle is report year 2005.
- For any number of vehicles operated in annual maximum service (VOMS) and the transit agency serves an urbanized area (UZA) with a population less than 200,000, the transit agency must collect passenger miles (PM) data every three years. The next mandatory sampling year for agencies on the three-year cycle is report year 2008.

The years when passenger mile (PM) data must be collected are called mandatory years.

Effective in 2005, FTA instituted requirements for transit agencies using automated passenger counters (APCs) to collect unlinked passenger trip and passenger mile data. FTA must grant approval before passenger mile data will be included in the Urbanized Area Formula Program allocation for funding, as described below.

Automatic Passenger Counters

Some transit agencies are using automatic passenger counters (APCs) for collecting unlinked passenger trip (UPT) and passenger mile (PM) data for bus (MB) mode, either through sampling or a 100% count of data. Some, but not all, of these transit agencies have asked what the requirements are for using APC data. These requirements include benchmarking the APC data for a year against sampled data for the same year.

Often these transit agencies only have a small percentage of their bus fleet equipped with APCs. The APC buses are often not randomly distributed over the bus routes, yielding biased data. Further, studies have shown that there can be significant problems with reliability and consistency. The APCs need to be calibrated and validated by each transit agency periodically in order to be used instead of sampling or 100% counts.

Therefore, effective with the 2005 Report Year, the requirement is that FTA approves the APC methodology, the implementation of a new APC system, and the APC maintenance and benchmarking plan for each transit agency. Failure to obtain prior FTA approval for Report Year 2005 and future report years will result in APC-derived passenger mile data not being included in the Urbanized Area Formula Program apportionment.

In order to ensure the reliability of the unlinked passenger trip (UPT) and passenger mile (PM) data FTA must approve the following:

- Implementation of a new APC system
- APC maintenance plan, i.e., periodic calibration of the APC equipment against benchmark dataset (i.e., developing adjustment factors for replicating UPT and PM data collected by ride checkers to APC derived UPT and PM data)

Specifically, this requires that for the first year the:

- APC-derived UPT and PM data are validated against a separate data sample covering a full year
- Data sampling meets FTA requirements for 95% confidence and 10% precision using:
 - A random sampling of vehicle trips
 - Assigning the buses with an APC to the vehicle trip sampling plan

In subsequent years:

- Calibration of the APC equipment every year using a random sample of at least 100 bus vehicle trips using ride checkers to collect the UPT and PM data.
- The transit agency submits to FTA documentation of the UPT and PM data collected by ride checkers compared to APC derived UPT and PM data and the statistical variance between the two data sets.
- Submit the documentation to NTD using the **e-File** tab in Internet Reporting.

See the passenger mile (PM) data discussion in the Service Consumed section of the Service form (S-10) in the NTD Urbanized Area Reporting Manual. Auditors should pay particular attention to the passenger mile (PM) sampling requirements and methodologies discussion.

Fixed Guideway Facilities

The formula allocations use the number of directional route miles (DRM) of travel on fixed guideway (FG) facilities, and also the number of directional route miles (DRM) of travel on fixed guideway (FG) facilities that began transit operations (revenue service) seven Federal fiscal years ago (i.e., on or before September 30, 1999, have been in continuous operation over the seven years and will be in operation on September 30, 2006).

NTD requires transit agencies to document, on the Fixed Guideway Segments form (S-20), fixed guideway (FG) facilities by segments with like characteristics (e.g., located in the same UZA, same rail line / bus facility or roadway, same direction of travel). The required information includes physical location of the segment, length (to the nearest hundredth of a mile), direction of travel (one or two-way operation); age of the facility (when transit service began revenue operation), and in the case of bus (MB), information about operating conditions (e.g., level of service (LOS), facility type, safety, high occupancy / toll (HO/T) lanes). The information also includes information on whether the fixed guideway segment's directional route miles (FG DRM) will be included on the Federal Funding Allocation Statistics form (FFA-10) for inclusion in the Federal funding allocations — i.e., which type of service (TOS) (directly operated (DO) or purchased transportation (PT)) and which NTD agency is claiming the directional route miles (DRM).

The Fixed Guideway Segments form (S-20) must be sufficiently detailed so that segments and their beginning and ending points are readily identifiable. For example, for a heavy rail (HR) line, use the line name (e.g., Red Line) and the station names to identify the end points. For bus (MB), if the facility is a roadway, use the common name of the roadway for the segment name, and intersections or milepost markers for the end points. For trolleybus (TB), this is usually the roadway in which the trolleybus (TB) line is located, and intersections for the endpoints.

The auditor should review this information against maps and inventories of the facilities, and documentation of when service started in revenue operation, level of service (LOS), safe operation and high occupancy / toll (HO/T) lane requirements. Distances should be verified by tracing the route miles on a map or traveling on the facility (and recording distances). In particular, HO/T lane requirements have been enhanced and clarified with the last federal transportation legislation, as described in the following.

High Occupancy / Toll (HO/T) Lanes

SAFETEA-LU enhances and clarifies provisions governing the use and operation of HOV, in particular the use of HOV facilities by high occupancy / toll (HO/T) vehicles. These are vehicles that are not otherwise exempt to use the HOV facility (e.g., energy efficient vehicles) if the vehicle pays a toll. HO/T toll lanes allow single occupant vehicles (SOVs) to gain access to high occupancy vehicle (HOV) facilities by paying a toll. If a transit agency has stricter requirements for high occupancy vehicles (HOV) facilities than the prohibition of single occupancy vehicles (SOVs), then those requirements apply to the high occupancy / toll (HO/T) lane.

A State agency with jurisdiction over the operation of a HOV facility must establish occupancy requirements for HOV lanes and for any exemptions. The State agency that chooses to allow exceptions to HOV requirements must certify to the U.S. Secretary of Transportation that they have established a program to monitor, assess, and report on the operation of the facility and the impact of high occupancy / toll vehicles and other low emission and energy efficient vehicles. An adequate enforcement program is also required, and provision made for limiting or discontinuing the exemptions if the facility becomes seriously degraded.

These provisions and clarifications also require that for excess toll revenues, priority consideration is to be given to projects for developing alternatives to single occupancy vehicle travel and for improving highway safety.

For NTD, transit agencies reporting HO/T lanes must provide a copy of the State's certification to the US Secretary of Transportation.

Each segment used as a high occupancy / toll (HO/T) lane must be identified by selecting the appropriate segment type in column h of the Fixed Guideway Segments form (S-20) for bus mode..

Age of Segment

In verifying the age of the segment, it is only necessary to determine if the segment is at least seven Federal fiscal years old since the time that transit operations began revenue service (i.e., when the segment began carrying passengers in regularly scheduled service). Please note that the segment age is based on initial revenue operation, even if the transit agency was not the original or first operator on the segment.

However, for apportionment purposes, the 7-year age requirement for fixed guideway segments is based on the report year when the segment is first reported by any NTD transit agency. This pertains to segments reported for the first time in the current report year. Even if a transit agency can document a revenue service start date prior to the current NTD report year, FTA will only consider segments continuously reported to NTD.

Segment Modifications

The auditor should pay particular attention to any segment modifications. Transit agencies may only modify service characteristics as described below. Auditors should review the Fixed Guideway Segments form (S-20) in the NTD Urbanized Area Reporting Manual for definitions and instructions for each field. Editable fields are:

- One-way or two-way operation of transit vehicles over a fixed guideway (FG) segment
- Out of revenue service date — The date the transit agency stopped operating transit services on the segment. This should be during the current report year. Other transit agencies may continue to operate on the segment. Auditors should verify this date from schedule sheets and published timetables.

Certain data fields will not be editable by the transit agency unless they have approval from FTA, specifically:

- Segment code (NTD database tracking number)
- Urbanized area / non-urbanized area (UZA / non-UZA) — 2000 Census
- Segment name
- Begins at
- Ends at
- Length — Reported in hundredths of a mile
- Segment type — Applies only to bus (MB)
- Peak level of service (LOS) — Applies only to bus (MB)
- Safe operation — Ensures that transit fixed guideway (FG) segments on high-speed roadways (expressways) are sufficiently separated from the congested travel lanes used by non-transit traffic. Safe operation applies only to bus (MB).
- Hours prohibited — Number of hours during the week that single occupancy vehicles (SOVs) (non-transit traffic) are prohibited from using the roadway at the same time as transit passenger vehicles. This roadway is often referred to as a high occupancy vehicle (HOV) facility and includes transit / pedestrian malls. Hours prohibited applies only to bus (MB) and trolleybus (TB). Vanpools (VP), emergency vehicles and police vehicles may also use the restricted roadway.
Enforcement of hours prohibited must be sufficient to ensure that 95 percent of the vehicles (transit vehicles, vanpools (VP), emergency and police) using the roadway are authorized to use it. This means there should be less than 5 percent usage by single occupant (driver with no passengers) vehicles. This applies only to bus (MB).
- Original date of revenue service — The date that public transit service started regardless of who the original operator was
- Agency revenue service start date — The date that the transit agency started operating transit services. This should be during the current report year. Other transit agencies may already operate on the segment. If the segment already exists, there should be an original date of revenue service.
- Months operated — If the transit agency began transit operations during the current report year or discontinued service, this number is normally less than 12. If there are temporary stoppages in service due to reconstruction or rehabilitation of a segment that exceed 12 months, the transit agency should inform FTA. FTA determines whether a full 12 months of service may be reported. Projects of less than 12 months duration may be reported as 12 months. Internet reporting automatically determines months operated using revenue service start or end dates.
- Type of service (TOS) claimed — Applies only if a transit agency operates the same mode over the same segment for both directly operated (DO) and purchased transportation (PT) services in its NTD report.
- NTD agency claiming — Applies to multiple NTD reporters operating over the same fixed guideway (FG) segment. The transit agency indicates which NTD agency is reporting the directional route miles (DRM) — as directly operated (DO) or as purchased transportation (PT) — on the Federal Funding Allocation Statistics form (FFA-10).

Auditor Role for New and Modified Existing Segments

Transit agencies may add new fixed guideway segments or modify existing fixed guideway segments. These new segments can be:

- A segment being reported to NTD for the first time by any transit agency, all data entry fields will be available. If a segment has been added as new it is important to verify that the segment has never been reported to NTD in prior years. If the segment has been reported before by any transit agency, the segment is available to select from the **Drop-Down** menu.
- A segment being reported to NTD for the first time by this transit agency. The segment is available to select from the **Drop-Down** menu. Only selected fields can be modified. Refer to the Fixed Guideway Segments form (S-20).

For new and modified segments, NTD also requires that the transit agency provide supporting documentation. This includes detailed maps that clearly show each segment and when revenue service first began on the segment. Until a segment is

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reviewed and accepted by NTD, it appears under a proposed new segments section on the Fixed Guideway Segments form (S-20), and the directional route miles for the segment are not included in the summary at the bottom of the form. Once a new segment is approved, NTD will enter the segment and its directional route miles into the database.

For new and modified segments, the following should be done:

- The auditor should review the supporting documentation and Fixed Guideway Segments form (S-20), and determine with the transit agency the directional route miles to be reported for the Federal Funding Allocation Statistics form (FFA-10).
- In completing the Federal Funding Allocation Statistics form (FFA-10), the transit agency should include the segment in reporting the directional route miles and associated statistics for actual vehicle revenue miles, passenger miles and operating expenses in the appropriate UZA / non-UZA column.

NTD requires the Independent Auditor Statement for Federal Funding Allocation Data to be completed prior to submission of the NTD annual report. Once NTD approves the new and modified segments and if none of the information on the Fixed Guideway Segments form (S-20) changes, the auditor does not have to re-review the Federal Funding Allocation Statistics form (FFA-10). If the information does change, the auditor must review the revised Federal Funding Allocation Statistics form (FFA-10), but does not have to submit a revised Independent Auditor Statement for Federal Funding Allocation Data. When submitting a revised report, Internet Reporting will prompt the transit agency to confirm that the chief executive officer certifies the revisions to the report and, if required, that the independent auditor has reviewed and concurred with the revisions.

Auditor Role for Deleted Segments

If the transit agency no longer operates over a segment reported in the prior year, the transit agency enters the date that transit service was last operated under Out of Revenue Service Date. The segment will be deleted and DRM eliminated in the summary at the bottom of the Fixed Guideway Segments form (S-20). The transit agency is not to use the **Delete** box. The auditor should confirm the Out of Revenue Service Date, i.e., the date on which the transit agency stopped operating service.

Operating Expenses

Operating expenses (OE) are the total modal expenses by type of service (TOS).

- For directly operated (DO) service it is the total on line 15 of the Operating Expenses form (F-30) of the directly operated (DO) modal page.
- For purchased transportation (PT) services, it is the total on line 15 of the purchased transportation (PT) modal page minus line 12, object class 508.02 and minus any other costs incurred by buyer for 508.02 related transit services if the seller is reporting the service. If the buyer is reporting the service, other costs by buyer are included. The other costs incurred by buyer are determined from the Contractual Relationship form (B-30). These are the costs of purchased transportation (PT) with operating statistics included in the NTD report (i.e., actual vehicle revenue miles (VRM), passenger miles (PM), and fixed guideway directional route miles (FG DRM)).

Purchased Transportation Services

The data for contracted services may be collected by the transit agency or by the contractor (provider of service). The auditor should determine who is responsible for collecting the data, and who at the transit agency reviews / approves the data.

Record Keeping — Documentation

NTD requires that documents be retained for three years from closeout of the report year. Documents may be in the form of paper copies or computer files. The auditor should confirm that all documents are safely stored and maintained. If these are computer files, there should be back-up procedures to ensure there is no loss of data.

Procedures

There are suggested procedures provided in the Declarations section of the reporting manual. If followed, they satisfy FTA requirements. Auditors should ascertain that the transit agency understands and agrees with each of the procedures. The auditor and the transit agency may, however, develop their own procedures as long as they address each of the topics itemized in "a" through "y".

Procedures a and b — Review Procedures

- a. Auditors should document alternate procedures used and attach to their Independent Auditor Statement for Federal Funding Allocation Data.

- b. Identify the person or persons responsible for supervising each data element. There may be multiple persons, especially where there are multiple modes and purchased transportation (PT) services.

NTD requires that the transit agency's established procedures (written or informal) ensure that NTD data are collected, reported and maintained on a continuous basis. While NTD does not specify procedures, the effort should result in data that meet FTA definitions and requirements for the NTD Program.

The auditor should review the collection and reporting of each data item used in the Federal funding allocations. Examples of issues that the auditor might address include:

- Actual vehicle revenue miles (VRM): Frequency of schedule preparation, how actual vehicle revenue miles (VRM) are determined from schedules as well as how / when missed trip records and additional trip records (non-scheduled service) are collected. If schedules are done on a quarterly basis, how often are the data accumulated and reviewed?
- Passenger miles (PM): If sampling is used to estimate passenger miles (PM), how often is the sample drawn? For example, if it is done based on quarterly schedules, then the sample(s) should be based on each quarter. There should also be adjustments to the sample if there are revisions to schedules. Are the samples routinely reviewed to ensure a sample was taken or if missed, was a replacement sample done? How often the sample is expanded — weekly, monthly, etc.?
- Fixed guideway directional route miles (FG DRM): Frequency of inventory of segments, particularly if there are reconstruction / realignments and new or deleted segments.

For new segments, there must be a date indicating the opening date of revenue service by any transit operator as your transit agency may not have been the original operator AND the revenue service start date that your transit agency began operating revenue service on a new or preexisting segment. For segments that your transit agency stopped operating transit service on during the year, the date must be the last date of the transit agency's revenue service. Other operators may continue to operate on this segment. If other agencies operate over the same fixed guideway (FG), ask if they have coordinated with the other agencies to ensure both are reporting the same date and other characteristics (length, start / end points, etc.). Both agencies report fixed guideway directional route miles (FG DRM) on the Fixed Guideway Segments form (S-20); however, only one may report the directional route miles (DRM) on the Federal Funding Allocation Statistics form (FFA-10). The agencies should coordinate among themselves to determine who will report the directional route miles (DRM). It is recommended that this is the principal operator on the segment.

Similarly, if a transit agency reports both directly operated (DO) and purchased transportation (PT) services in their NTD report that operate over fixed guideway (FG), the directional route miles (DRM) are reported on both the directly operated (DO) and purchased transportation (PT) Fixed Guideway Segments form (S-20) but only once on the Federal Funding Allocation Statistics form (FFA-10).

In the case of highways with lanes restricted to high occupancy vehicles (HOV), this is the date when buses (MB) and other multi-passenger vehicles (vanpool (VP)) started / ended service on the facility (by the original operator). Also, note that for highways, only bus (MB) qualifies a segment as fixed guideway (FG). Facilities that only operate for vanpools or carpools do not qualify as fixed guideway for NTD reporting.

In the case of HOV facilities that are also HO/T lanes, the lanes must meet FTA requirements that traffic flow of transit vehicles is not impeded and that toll revenues are used for transit. These toll revenues must be an increase in transit funds; not a replacement to existing transit sources of funds.

- Operating expenses (OE): How often are summaries run and reviewed? Weekly, monthly, quarterly? How are operating expenses (OE) addressed in the annual financial audit? The auditor could follow similar procedures.

Procedures c and d — Records Retention

- c. NTD requires that documents be retained for three years. Documents may be in the form of paper copies or computer files. If these are computer files, there should be back-up procedures to ensure there is no loss of data. Determine how and where documents are stored that support the statistics on the Federal Funding Allocation Statistics form (FFA-10).
- d. In identifying the source documents, the following are typical documents:

- Actual vehicle revenue miles (VRM): Schedule sheets, missed and additional trip sheets / reports for scheduled services and trip records for non-scheduled services (vanpool (VP), publico (PB), jitney (JT), demand response (DR)). The auditor should also inquire how distances are determined (maps, running the route, stop / station location inventory, odometer readings, etc. Look for documentation of "extra service" — service that is not part of the regularly scheduled transit services.
- Passenger miles (PM): Sampling procedure and if an alternative technique, the qualified statistician's approval and a description of the technique (see the Service form (S-10) discussion under Unlinked Passenger Trips (UPT) and Passenger Mile (PM) Data), listing of the trips that were to be sampled, completed forms used to collect the sample trips and data accumulation sheets showing how the sampled data was expanded. The auditor should also inquire how distances are determined (maps, running the route, stop / station location inventory, odometer readings, etc.)

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- Fixed guideway directional route miles (FG DRM): Inventory and map of segments; documentation of changes to directional route miles (DRM) during the report year from service started or discontinued. Look for official documentation of changes (may be reflected in schedule sheets or transit agency Board minutes for service changes).
- Operating expenses (OE): Use the documents that the auditor would normally follow in preparing an annual financial statement. This will provide the total cost. Ask how the transit agency arrives at modal level data. The transit agency is required to track each operator's salary and wages by mode and function, but may use a cost allocation methodology for other operating expenses (OE).
- Contracts for purchased transportation (PT) services: Do the contracts contain provisions that address the concerns discussed for the preceding data items?

Procedures e and f — Internal Controls

- e. In discussing the internal controls, there may be different persons responsible by mode or type of service (TOS). Each data item (actual vehicle revenue miles (VRM), passenger miles (PM), fixed guideway directional route miles (FG DRM) and operating expenses (OE)) should be reviewed by mode and type of service (TOS).
- f. This suggested procedure assumes that a supervisor signs his / her reviews of source documents. If this is not the transit agency policy, ask how supervisory reviews are documented and confirmed. This procedure also states that the auditor should select a random sample. FTA does not specify the size of this random sample; therefore, the auditor working with the transit agency should determine what a reasonable amount of source documents to review is. The auditor should pay particular attention to the controls for data obtained from purchased transportation (PT) providers including vanpool (VP) operators.

Procedure g — Worksheets and Summaries

- g. Worksheets: If the transit agency uses worksheets (paper or computer software) or other software programs, the auditor should verify that the data are consistent with that entered into the NTD report on the Federal Funding Allocation form (FFA-10). In the case of computer software, the auditor may wish to verify / test any formulas.

Periodic summaries: The auditor should verify that any periodic summaries that the transit agency produces agree with worksheet or software program reports described above, for example:

- Monthly or quarterly ridership reports (for unlinked passenger trips (UPT) to expand the passenger mile (PM) sample surveys).
- Monthly or quarterly records of missed trips and extra service trips.
- Any reports documenting re-inventory or additions / deletions of segments for fixed guideway (FG) facilities.
- Monthly or quarterly budget to actual comparisons.

When looking at the worksheets and periodic summaries the auditor should address arithmetical accuracy and Internet Reporting.

Arithmetical accuracy: The auditor should test to see whether numbers are correctly entered, expanded, totaled, etc. as applicable. If formulas are used, are they correct?

Internet Reporting: The auditor should recognize that the transit agency must use Internet Reporting to complete the NTD Annual Report. The software automatically transfers data from the NTD source forms to the Federal Funding Allocation Statistics form (FFA-10) with the exception of the actual vehicle revenue miles (VRM) used in the Capital Program for Fixed Guideway Modernization allocation.

The transfer of data is described in Exhibit 23 in the Reporting Manual. Internet Reporting transfers the data automatically to the correct form using the mode and type of service (TOS) described on the Identification form (B-10). However, the auditor should review the form to ensure that allocations of data for multiple urbanized areas (UZA) and non-urbanized areas (non-UZA) which total in the annual total column are equal to the source form data in column a as follows:

- Bus (MB): Column a = annual total column for lines 3 — 5 and 14. These cover non-fixed (NFG) and fixed guideway (FG) actual vehicle revenue miles (VRM), passenger miles (PM) and operating expenses (OE) in the Urbanized Area Formula Program allocation, and fixed guideway directional route miles (FG DRM) in the Capital Program for Fixed Guideway Modernization allocation.
- Other non-fixed guideway (NFG): Column a = annual total column for lines 11 — 13. These cover actual vehicle revenue miles (VRM), passenger miles (PM) and operating expenses (OE) in the Urbanized Area Formula Program allocation.
- Rail, ferryboat (FB), trolleybus (TB) and aerial tramway (TR): Column a = annual total column for lines 06, 08 — 10, and 14.

Note that only one transit agency may report directional route miles (DRM). However, each transit agency operating over the same fixed guideway (FG) should report on the Federal Funding Allocation Statistics form (FFA-10) the actual vehicle revenue miles (VRM), passenger miles (PM) and operating expenses (OE) for the service operated.

For bus (MB), Urbanized Area Formula Program, the number of actual vehicle revenue miles (VRM), passenger miles (PM) and operating expenses (OE) operated over all fixed guideway (FG) should be reported based on the directional route miles (DRM) calculated on line 12 of the Fixed Guideway Segments form (S-20) form.

For bus (MB), Capital Program for Fixed Guideway Modernization, the number of actual vehicle revenue miles (VRM) operated over fixed guideway (FG) more than seven years should be reported based on the directional route miles (DRM) calculated on line 16 of the Fixed Guideway Segments form (S-20) form.

Procedures h through k — Passenger Miles

These procedures determine if there is a valid sampling methodology for collecting passenger miles (PM) and whether the methodology was correctly applied. The auditor checks to see that the sample was random and contains the required number of samples, and that the sample was conducted. Lastly the auditor verifies that the data from the sample were correctly summarized and extrapolated to arrive at the passenger mile (PM) data.

The auditor should recognize that it is not his / her duty to validate the sampling methodology. The auditor is only to verify that a valid sampling methodology (i.e., a FTA technique or one approved by a qualified statistician) was used and implemented properly.

The auditor should also inquire if automated passenger counters are used for collecting passenger mile data and ensure that the requirements described above under the discussion of passenger miles, are met.

- h. Mandatory and intermediate years: The auditor should recognize that the last mandatory sampling year for some agencies was 2005 (see above). See procedure "i".

Methodology: If a transit agency uses an alternative sampling technique, then there should be documentation that a qualified statistician approved the procedure. FTA does not specify the qualifications for the statistician. The transit agency is required to have documentation that the methodology meets FTA requirements for 95 percent confidence and + or – 10 percent precision. See the Service form (S-10) discussion under Unlinked Passenger Trips (UPT) and Passenger Mile (PM) Data. There is a description of what the documentation should include.

Since passenger miles (PM) are the accumulation of the distance ridden by each passenger, it is highly unusual that there will be a 100 percent accumulation / count of the data. Normally, the only exceptions are for:

- Demand response (DR): Individuals usually call-in to make reservations; there will be records by date, time, pick-up and drop-off points for each passenger and generally odometer readings for these points.
- Vanpool (VP): If the driver records daily which participants rode since the starting and ending locations will not vary.
- Commuter rail (CR): If distance ridden by a passenger can be determined by the fare / ticket cost.
- Ferryboat (FB): If there are a limited number of stops; passengers are easily counted at each stop. Or similar to commuter rail (CR), the distance ridden by a passenger can be determined by the fare / ticket cost.
- Inclined plane (IP): There are usually no intermediate stops.
- Bus (MB): If operating with only a few vehicles (10) and a limited number of stops.

- i. 2006 is not a mandatory sampling year for directly operated (DO) if the transit agency serves a population equal to or greater than 500,000 and there are 100 or more vehicles operated in annual maximum service (VOMS). The last mandatory year was 2005; the next mandatory year is 2008.

- j. The most common problems with the actual sample are:

- Trips from the sample are missed. If so, there should be replacement trips that are randomly selected.
- The sample is purposely designed with more than the minimum required number of samples in the event that some samples are missed. If this occurs, the transit agency should show that the missed trips occurred randomly.
- The sample is not adjusted if there were additions / deletions in service.
- The sample is not adjusted if there is a change in fare structure (for revenue-based methodologies).

- k. If a trip survey sheet is incomplete, determine if it has been excluded. There should be a valid survey sheet for a replacement trip (see item "j"). Make sure that the required number of samples is met.

If software programs do the computations make sure the data are correctly entered and formulas for the data estimation are correct. If there are errors in computations (manual or software programs), they should be corrected and the passenger miles (PM) re-computed. The revised figures should be entered in the NTD report —Service form (S-10) and Federal Funding Allocation Statistics form (FFA-10). The auditor should discuss with the transit agency procedures to ensure proper computations for future reports.

Procedures l through n — Actual Vehicle Revenue Miles

- l. Few agencies operate charter services or school service. If either exists, the auditor should confirm that it is truly charter or school bus service, rather than public transportation.

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In the case of charter service, agencies often misclassify specialized services for one-time events. To be charter, the service is restricted to a specific clientele. In a special service, it will be open to the public. For example:

- A home and garden show is being held at a downtown convention center for one week. The convention center contracts with the transit agency to run a special convention route so that visitors can easily get to the convention center. Anyone may board the vehicles. Even though there may be a specific route and schedule, it would not be considered regular, continuing service since it only operates for the one week. This would not be charter service. It should be classified as extra service and should be included.
- A convention center contracts with the transit agency to take exhibitors to / from a remote parking area or hotels for accommodations. Only the exhibitors may use the service. This would be charter service since the general public would not be allowed to use the service.

For school bus service, agencies misclassify school trippers as school bus service. A transit agency may increase service along existing routes to accommodate school children, i.e., school tripper service. The general public can ride on the trippers. School bus service is exclusively for students going to / from home and school.

Examples of other ineligible vehicle miles are:

- Road test miles (testing the vehicle prior to operation in revenue service).
- Training miles (when the vehicle is used to train an operator and the vehicle is not picking up / dropping off passengers).
- Moving vehicles to / from / within storage or maintenance facilities.
- The governor comes to town. The transit agency provides a bus and driver to give a tour of the city to the governor and his / her staff.

These vehicle miles would be included only on the Revenue Vehicle Inventory form (A-30), not on the Service form (S-10).

- m. There is an extensive discussion and examples of accounting for miles and hours of service for rail, bus (MB), demand response (DR) and vanpool (VP) service; and, what is deadhead. The auditor should review these sections in the Service form (S-10) in the Reporting Manual and pay particular attention to Exhibits 15, 16 and 17 that describe the accounting for miles and hours for bus, demand response (DR) and rail service.

The determination of deadhead miles is most often a problem with demand response (DR), vanpool (VP), ferryboat (FB) and purchased transportation (PT) services.

- Demand response (DR): Determining deadhead is based on when vehicles leave / return to the dispatching point. Reporters tend to over count deadhead miles — even though there may not be a passenger in the vehicle as it goes from a passenger drop-off to the next passenger pick-up, the miles between the two points are actual vehicle revenue miles (VRM) (not deadhead miles).
 - Vanpool (VP): In determining deadhead it is important to determine whether the driver is paid or not. Basically, if the driver is paid, his / her travel is considered deadheading.
 - Ferryboat (FB): It is not unusual to have no deadhead reported since ferryboats (FB), especially large boats, are often stored at the docks where service originates / ends. If the boats are not stored at these facilities, then there should be some deadhead for the boat to get from / to the storage facility to the dock where the route starts / ends.
 - Purchased transportation (PT): Sometimes the purchased transportation (PT) contract states that the transit agency only pays when the vehicle is actually in revenue service, i.e., available to carry passengers. If there is no deadhead reported, the auditor should review the terms of the contract.
- n. Locomotives are excluded from the calculation of actual vehicle revenue miles (VRM) since they do not carry passengers.

Procedures o through s — Fixed Guideway Facilities

- o. See the Identification form (B-10) for the definition of the modes (rail and non-rail).
- Bus (MB): Check for HO/T lanes and whether a copy of the State certification has been sent to NTD. See HO/T lane discussion above.
 - Trolleybus (TB): A common problem is trolleybus (TB). Buses that are designed to look like trolleybuses (TB) are not fixed guideway (FG); trolleybuses (TB) must draw power and operate via overhead electrical lines.
 - Level of service (LOS): For bus (MB) operating on fixed guideway (FG)(i.e., high occupancy vehicle lanes (HOV) or busways), determining the level of service (LOS) can be a problem.
 - The level of service (LOS) is for the surrounding travel corridor, not the level of service (LOS) on the high occupancy vehicle (HOV) lane or busway.
 - The level of service (LOS) information should be updated annually for the NTD report. If a transit agency needs assistance, FTA suggests that they contact their local or state highway department.

- p. The auditor should review the discussion of directional route miles (DRM) for both rail and non-rail modes in the Fixed Guideway Segments form (S-20). There are examples and illustrations.
- Multiple operators on the same fixed guideway (FG): A common problem is counting the directional route miles (DRM) more than once for a segment because more than one reporter operates over it. The directional route miles (DRM) can only be counted once on the Federal Funding Allocation Statistics form (FFA-10). Similarly, if the same fixed guideway (FG) is used for both directly operated (DO) and purchased transportation (PT) services within the transit agency's NTD report, the directional route miles (DRM) can only be counted once.
 - Ferryboat (FB): Another common problem is counting directional route miles (DRM) for ferryboat. The requirements are based on minimum distances. For ferryboat (FB) operations, the transit agency should measure the fixed guideway directional route miles (FG DRM) as the most direct route between terminals, over navigable water, in statute miles. This route may not be the length of the actual path followed. Also, if there are several terminals connected by multiple routes, the transit agency should measure the fixed guideway directional route miles (FG DRM) as the minimum path connecting all the terminals.
 - Average monthly directional route miles (DRM): For service changes during the year, the average monthly directional route miles (DRM) should be based on whole months, rounding up or down using the 15th of the month. For example, for service that started on May 16th, the month would not be counted. If it started on May 15th, the month would be counted. Conversely, if service ended on May 15th, the month would be counted. However, the month would not be counted if the service ended on May 14th.
- q. The auditor is required to confirm fixed guideway directional route miles (FG DRM) by either measuring on a map or retracing the route. Since a detailed listing is described on the Fixed Guideway Segments form (S-20), the auditor should inquire how those measurements were determined. If maps were used, the auditor should use the same maps to confirm the mileage.
- r. Since only one transit agency may claim the directional route miles (DRM) on the Federal Funding Allocation Statistics form (FFA-10), it is very important that the agencies coordinate on who will report the directional route miles (DRM). As discussed in procedure "g", each transit agency operating over the fixed guideway (FG) should report the actual vehicle revenue miles (VRM), passenger miles (PM) and operating expenses (OE) for the service operated. This is also true for purchased transportation (PT) services included within a transit agency's report where both purchased (PT) and directly operated (DO) services operated over the same fixed guideway (FG).
- s. The auditor should compare the 2005 and 2006 Fixed Guideway Segments forms (S-20) and identify changes. If there are changes, the auditor should document reasons for each change.

Procedure t — Operating Expenses

- t. The total operating expenses (OE) on the Operating Expenses Summary form (F-40) after reconciling items (i.e., Total transit agency expenses on line 15, column f) should equal the audited financial statements. If they do not, the auditor should describe the discrepancy.

Procedures u through w — Purchased Transportation Services

- u. The fare revenues for purchased transportation (PT) are for the service provided regardless of who collects the fare, or whether fares are retained or returned to the purchased transportation (PT) contractor. The auditor should refer to the reporting requirements for Net Contract Expenditures by the Buyer (after fare revenues) in the Contractual Relationship form (B-30) in the Reporting Manual.
- v. The auditor and transit agency should recognize that if the purchased transportation (PT) data have not been reviewed by an independent auditor, then the data for those services may not be included in the allocation formulas.
- w. The auditor should note as an exception if the contracts do not meet all of the requirements described in the Reporting Manual discussion of the Contractual Relationship form (B-30). For Federal funding purposes, if the requirements are not met, then the data for those services may not be included in the allocation formulas.

Procedure x — Allocating Data to Multiple UZAs and Non-UZAs

- x. The transit agency may report the data in several ways taking into account the UZAs and non-UZAs served. The auditor should review the requirements under the Reporting Data among UZAs and Non-UZAs section of the Federal Funding Allocation Statistics form (FFA-10).

The auditor should recognize that for funding purposes, the geographic location of transit services is not necessarily the same as the allocation of actual vehicle revenue miles (VRM), passenger miles (PM), and operating expenses (OE) on this form. Transit agencies may report data based on the area served. This means that the geographic coverage of services described by Item 5 Demographic Information on the Transit Agency Identification form (B-10) may indicate more UZAs and non-UZAs than those used in the allocation of data. However, all UZAs over 200,000 are automatically displayed on the Federal Funding Allocation Statistics form (FFA-10) line 01.

In addition for those UZAs, the fixed guideway directional route miles (FG DRM) must comply with the following:

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- If there are only UZAs over 200,000 population indicated on line 01, then the directional route miles (DRM) must equal, by UZA, the directional route miles (DRM) reported on the Fixed Guideway Segments form (S-20).
- If there are non-UZAs or UZAs with fewer than 200,000 population indicated on line 01, then the directional route miles (DRM) in UZAs over 200,000 population must contain at least as many directional route miles (DRM), by UZA, as those reported on the Fixed Guideway Segments form (S-20).

The auditor should also recognize that the transit agency must document the allocation methodology used.

Procedure y — Changes in Data Statistics from Last Year

- y. To assist the auditor in this comparison, FTA has implemented an Auditor Time Series Report that shows the changes in data statistics reported on the Federal Funding Allocation Statistics form (FFA-10).

In addressing changes of more than + or – 10 percent from the 2005 report year for actual vehicle revenue miles (VRM), passenger miles (PM) and operating expenses (OE), the auditor should consider and inquire about the following:

- Operating expenses (OE): Are the increases / decreases related to similar changes in transit services as measured by actual vehicle revenue miles (VRM) or hours VRH? Or, are the increases / decreases due to other factors such as new labor contracts, changes in the cost of materials and supplies, and expenses for services not yet opened to the public (for example, costs in planning, promoting and testing a new rail facility).
- Passenger miles (PM): Are the increases / decreases related to similar changes in transit services as measured by actual vehicle revenue miles (VRM) or hours (VRH)? If the changes are not the result of service cuts or expansion or restructuring existing services, then was there a similar change in unlinked passenger trips (UPT)? Was there a change in fare structure? Higher fares should reduce ridership / passenger miles (PM), while lower fares should increase ridership / passenger miles (PM). If there was a fare change, at what point was the change made during the report year? If the fare increase was implemented at the end of the fiscal year, this would have a small impact on passenger miles (PM) (the impact will be evident in the next report year).
- Actual vehicle revenue miles (VRM): Are the increases / decreases related to similar changes in actual vehicle revenue miles (VRM) or hours (VRH)? Are there similar changes in unlinked passenger trips (UPT) and passenger miles (PM)? Generally, a reduction in actual vehicle revenue miles (VRM) means there is less service available and results in less riders and hence, less passenger miles (PM). The converse is also true, if there is an increase in actual vehicle revenue miles (VRM), then there should be an increase in riders and passenger miles (PM). However, in the case of actual vehicle revenue mile (VRM) increases, there is usually a lag effect of several months for ridership. Hence, the percentage increase in passenger miles (PM) is normally less than the percentage increase in actual vehicle revenue miles (VRM). This lag effect should be considered when comparing with last year's report.

In addressing changes of more than + or - 1 percent for fixed guideway directional route miles (FG DRM), the auditor should consider and inquire about the following:

- What segments of fixed guideway (FG) were added or are no longer being used? For segments that were deleted, the transit agency cannot report the actual vehicle revenue miles (VRM) on the Federal Funding Allocation Statistics form (FFA-10) line 15 for the Capital Program for Fixed Guideway Modernization allocation.
- Is the change the result of another transit agency also operating on the fixed guideway (FG) and which transit agency is reporting the directional route miles (DRM)? The auditor should ensure that even though only one transit agency may report the directional route miles (DRM), each transit agency operating over the fixed guideway (FG) facility should report the actual vehicle revenue miles (VRM), passenger miles (PM) and operating expenses (OE) for that service. Also, a transit agency must report all the data items, not just actual vehicle revenue miles (VRM) for example.
- Is the change the result of re-measuring? If so, FTA may ask for detailed documentation on why the re-measurement resulted in a change.